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10/564,396

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EXAMINER

LEE, BENNY T

ART UNIT

PAPER NUMBER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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**Office Action Summary**

Application No.

10/564,396

Applicant(s)

TAE ET AL.

Examiner

Benny Lee

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                           |

The disclosure is objected to because of the following informalities: Page 1, line 13, note that “air interface network” is vague in meaning and needs clarification; lines 23, 26, note that --up towards-- should be inserted after “climb” for an appropriate characterization. Page 2, line 1, note that --more-- should be inserted after “much” for an appropriate characterization. Page 4, line 1, note that “be that as it may ...” should be rephrased for idiomatic clarity; line 15, note that “Disclosure” should be rewritten as --Summary-- as to be consistent with PTO guidelines. Page 6, line 25, note that --Best-- should be inserted prior to “Mode(s)” as to be consistent with PTO guidelines. Page 7, line 7, note that “210 to 250” should be rewritten as --210, 220, 230, 240 and 250-- for consistency with the labeling in “Fig. 2”. Page 8, line 26, note that --may not be described in detail-- should be inserted after “drawings” for clarity of description. Page 10, note that the reference to “first induction unit 13” and “second induction unit 14” are respectively vague in meaning and need clarification; Line 16, note that “decides” should be rewritten as --determines-- for clarity of description. Page 12, line 9, note that “owing” should be rewritten as --due-- for idiomatic clarity. Appropriate correction is required.

The disclosure is objected to because of the following informalities: Note that the following reference labels need to be described with respect to the corresponding drawing figures specification description: Fig. 1 ( $1 < 0$ ;  $2 < 0$ ;  $0.5 < +3\theta/2$ ;  $1 < +\theta/2$ ;  $1 < -\theta/2$ ;  $0.5 < -3\theta/2$ ); Fig. 2 (RF SIGNAL, ARRAY ELEMENT (1, 2, 3, 4, 5); P1/\_01; P2/\_0; P3/\_03; P4/\_04; P5/\_05). Appropriate correction is required.

The use of the trademark Teflon (page 8, line 9) has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claims 2-6, 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 2, 4, note that reference to a "first induction unit" and a "second induction unit" are respectively vague in meaning as to what characterizes such "induction units". Clarification is needed. Moreover, note that the recitation of "on the same plane as said input port" (i.e. claims 2, 4) and "on the same plane as said phase shift means" (i.e. claim 2) are respectively vague in meaning since these features have not yet been defined as being on any "plane". Clarification is needed.

In claim 5, note that reference to "the dielectric" lacks strict antecedent basis.

In claim 6, note that the recitation "on the same plane" is vague in meaning since no "plane" has been defined for the feature in question. Clarification is needed.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 8, 9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by the Takahashi et al reference (cited by applicants').

The Takahashi et al references discloses with respect to Fig. 1, a phase shifter comprising a power dividing means (e.g. at the far left side of the Fig. 1 structure) which receives an input signal and splits the input signal into a first and second output signal. Note that the second output signal is of a fixed phase value and is connected to the central antennas (1e, 1f), while the first output signal from the dividing means is further split into third and fourth divided signals (i.e. at the upper junction of the dividing means). Note that each of the third and fourth signals are fed into corresponding phase shifters (e.g. 3B, 4B) and includes a portion of the signals which moves in opposite directions to feed differently located antennas (e.g. antennas 1a, 1g, etc). It should be noted that the phase shifters (3B, 4B) have phase delay means (i.e. wiper arm phase delay means) having a difference in length, and as such provides a phase difference between the third and fourth divided signals. Note that each one of the third and fourth divided signals ultimately feeds four antennas for a total of eight ports being fed, as depicted in Fig. 1.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2-6, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al (cited by applicants') in view of Phillips et al.

Takashi et al discloses the claimed invention except for the specific structure of the wiper arm configuration.

Phillips et al discloses a phase shifter including a wiper arm assembly disposed on a dielectric layer (e.g. see Figs. 1A-1C). More particularly, Fig. 5 discloses a configuration where two wiper arm assemblies are configured with respect to a dividing means.


Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the wiper arm phase shifters (e.g. 3B, 4B) of Takashi et al to have been configured, such as taught by Phillips et al. Such a modification would have been considered an obvious substitution of art recognized equivalent phase shift structures, from the same field of endeavor (i.e. wiper arm phase shifters), especially since the generic wiper arm phase shifter in Takashi et al would have suggested that any equivalent wiper arm phase shifter (e.g. such as those in Phillips et al) would have been usable therewith, thereby suggesting the obviousness of such a modification.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zimmerman et al discloses a wiper arm phase shifter having a pivotable power divider..

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 571 272 1764.

B. Lee

  
BENNY T. LEE  
PRIMARY EXAMINER  
ART UNIT 2817